PHENIX

Technical Support 2008

PHENIX
WEEKLY PLANNING

2/28/2008

Don Lynch

Run 8 Task Schedule

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Item	Start	Finish
RPC support	On Going	On Going
CM Crane design review	On Going	On Going
Next scheduled Maint. Day?	None	None7
Mu Trigger FEE Prototype tests	2/27	3/15
Complete new beampipe design	2/29	2/29
End PP run	3/10	3/10
Low energy Run	3/11	3/12
End of Run 8	3/12	3/12
Install new UPS	3/15	3/31
End of Run Party	4/4	4/4
Install Gas house UPS's	4/15	6/13

Yesterday's Maintenance Access: Feb 27th

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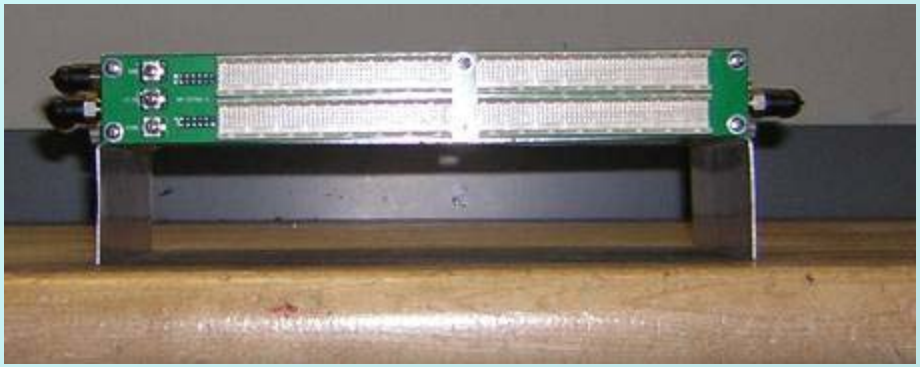
Installed and Tested Mu Trigger prototype FEE

Field fit CM access stair hardware

Evaluate cable paths for MuTrigger FEE's

Other Tasks ?



CM Ladder/Stair Shutdown Access

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Ladders done

Railing Complete

Design Reviews

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- CM Crane (analyses complete need meeting with)
- MMN Scaffolding (design submitted to C-A for review)
- New Beampipe Review (ready for review)
- Station 1 Scaffolding (DESIGN IN PROCESS)
- Mu Trigger FEE N & S 3/19
- RPC Prototype 3/25 (Prototype design, installation, gas system, electronics, safety)
- MuTrigger N & S rack platform 4/21-5/2 (On deck for design)
- RPC Stations 1, 2 and 3 6/22-6/20
- VTX/FVTX review 8/1-8/31
- NCC Review 8/1-8/31
- MMS scaffolding (< 2009)

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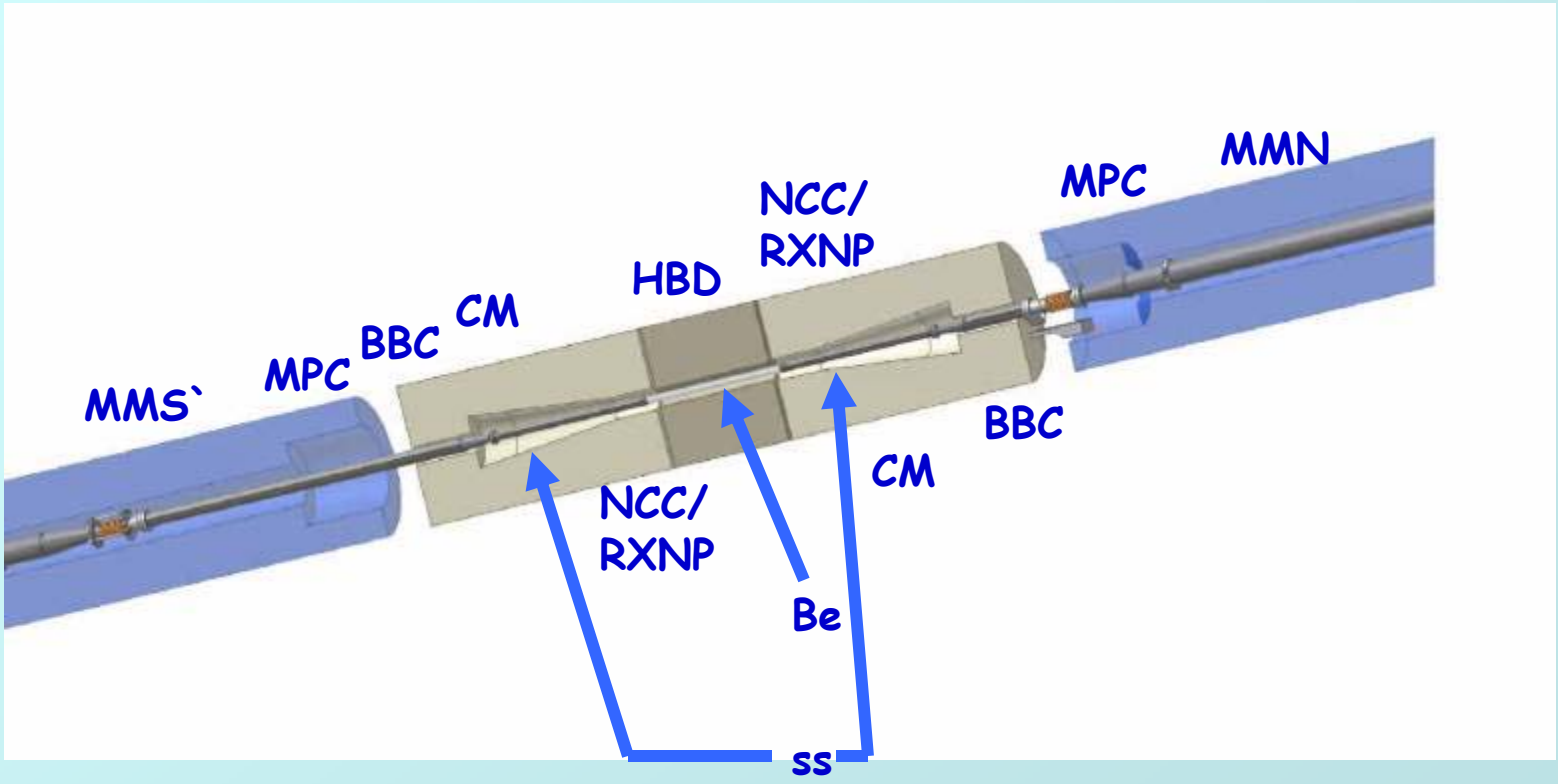
New Beampipe Design & Review



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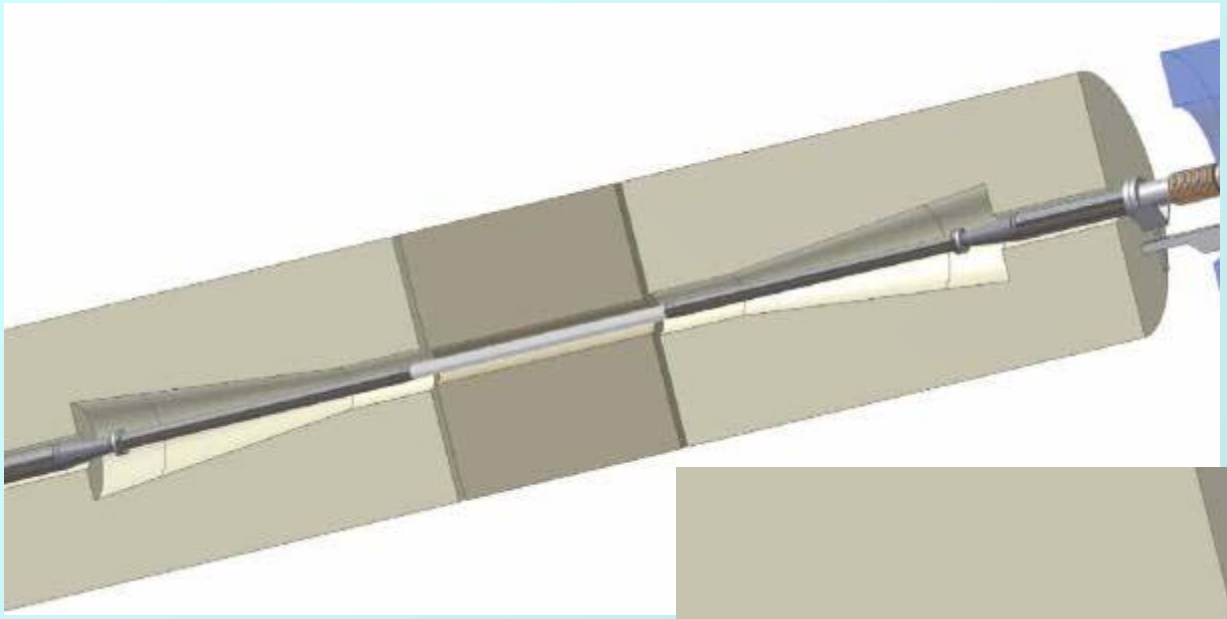
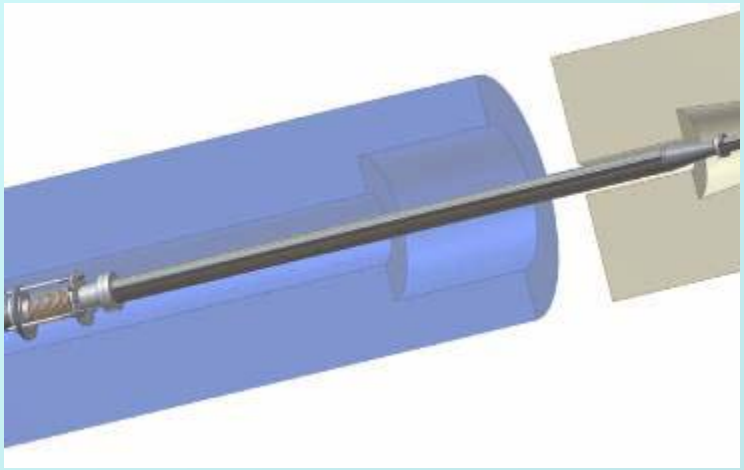
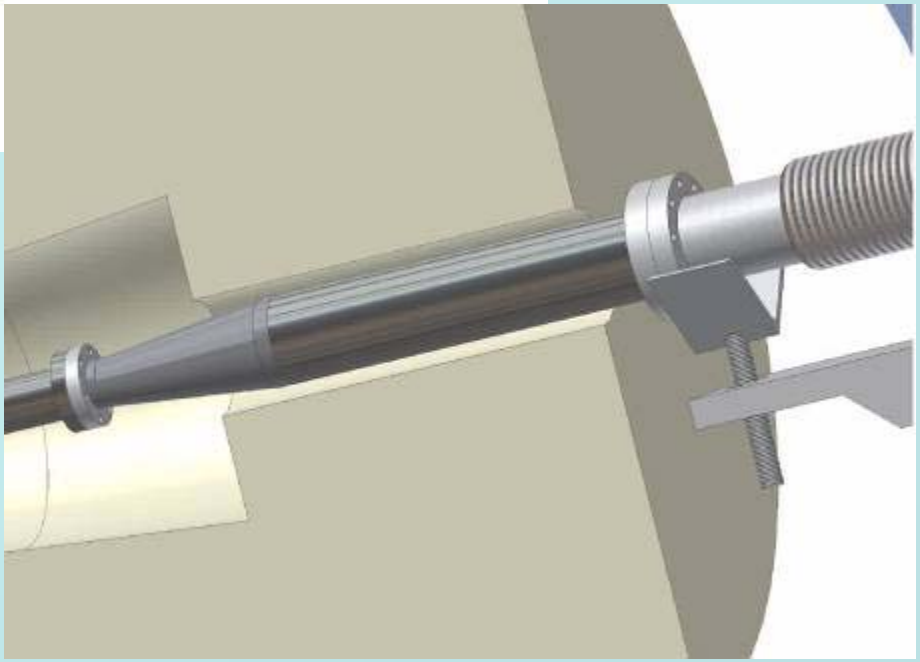
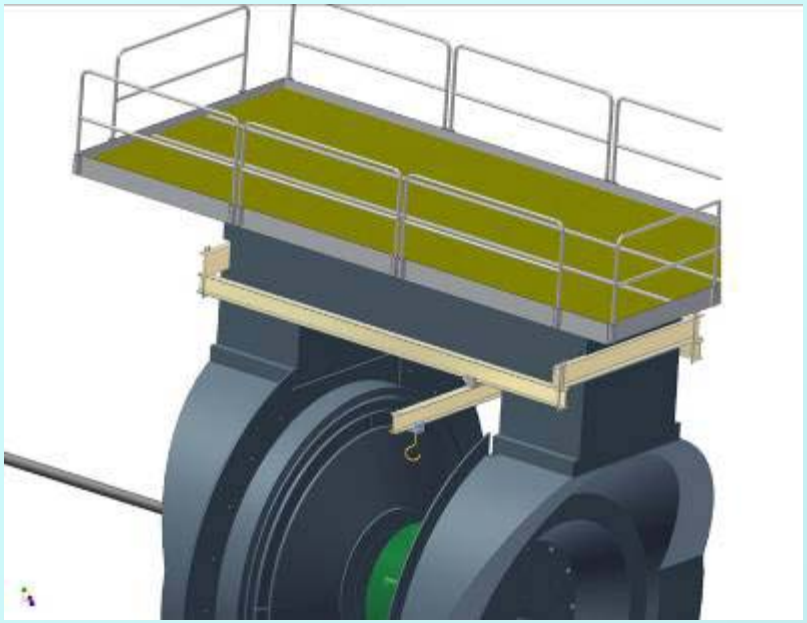






CM Crane



- Uses Gorbel 1-ton capacity Ceiling mounted Bridge Crane, modified to be supported by 2 Steel Channels attached to CM
- Bridge and hoist to be removed for running.
- Crane Design under review


PHENIX Relativistic Heavy Ion Collider (RHIC) PHENIX Experiment

BROOKHAVEN NATIONAL LABORATORY

ENGINEERING CALCULATION

TITLE: Central Magnet Bridge Crane

PREPARED BY: Don Lynch, P.E.

CHECKED BY:

Introduction

Received questions and comments from Steve Kane & John Hynan.

Will set upreview by end of next week.

Muon Trigger Rack Platforms

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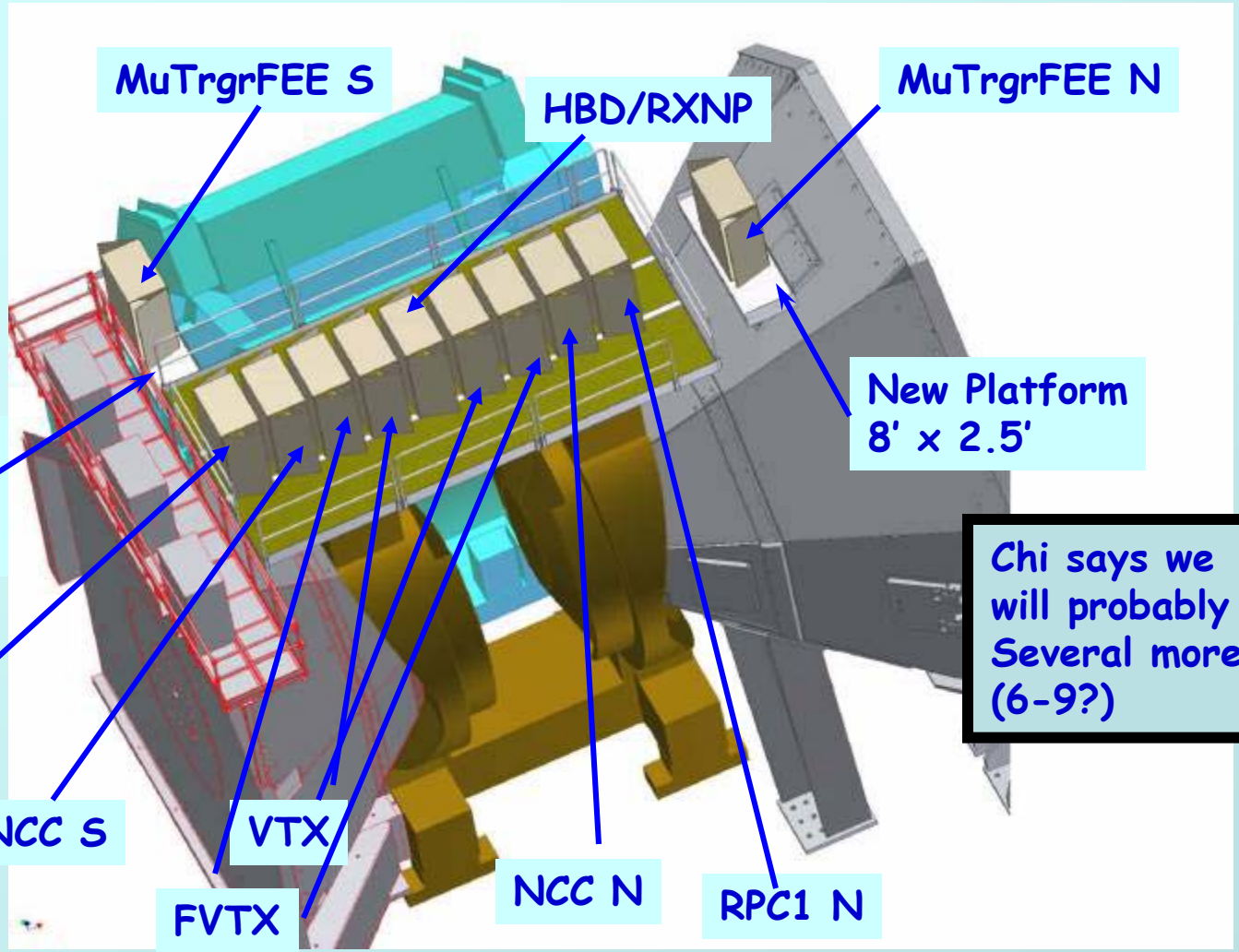
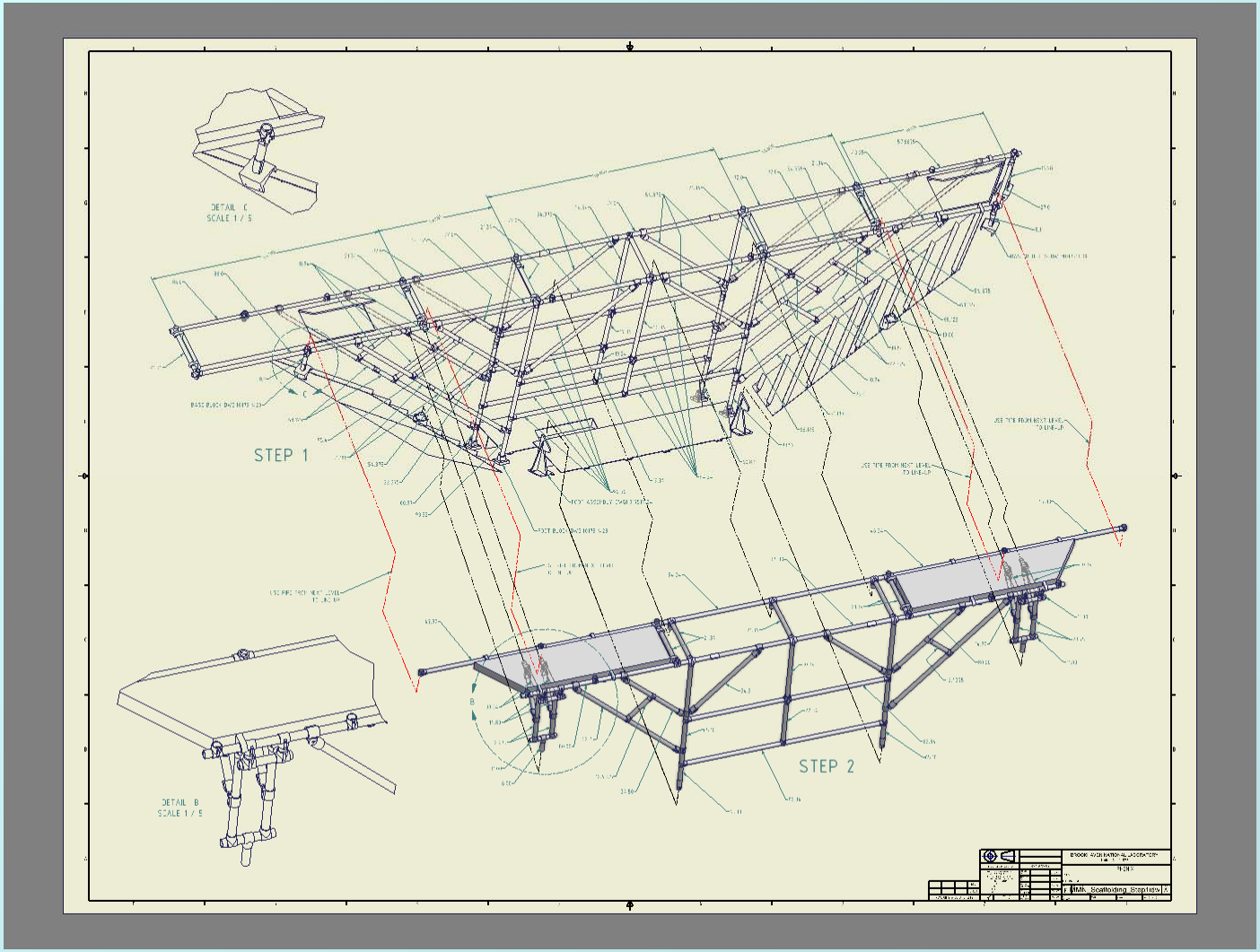


Chi says we will probably need Several more racks (6-9?)

MMN Scaffolds

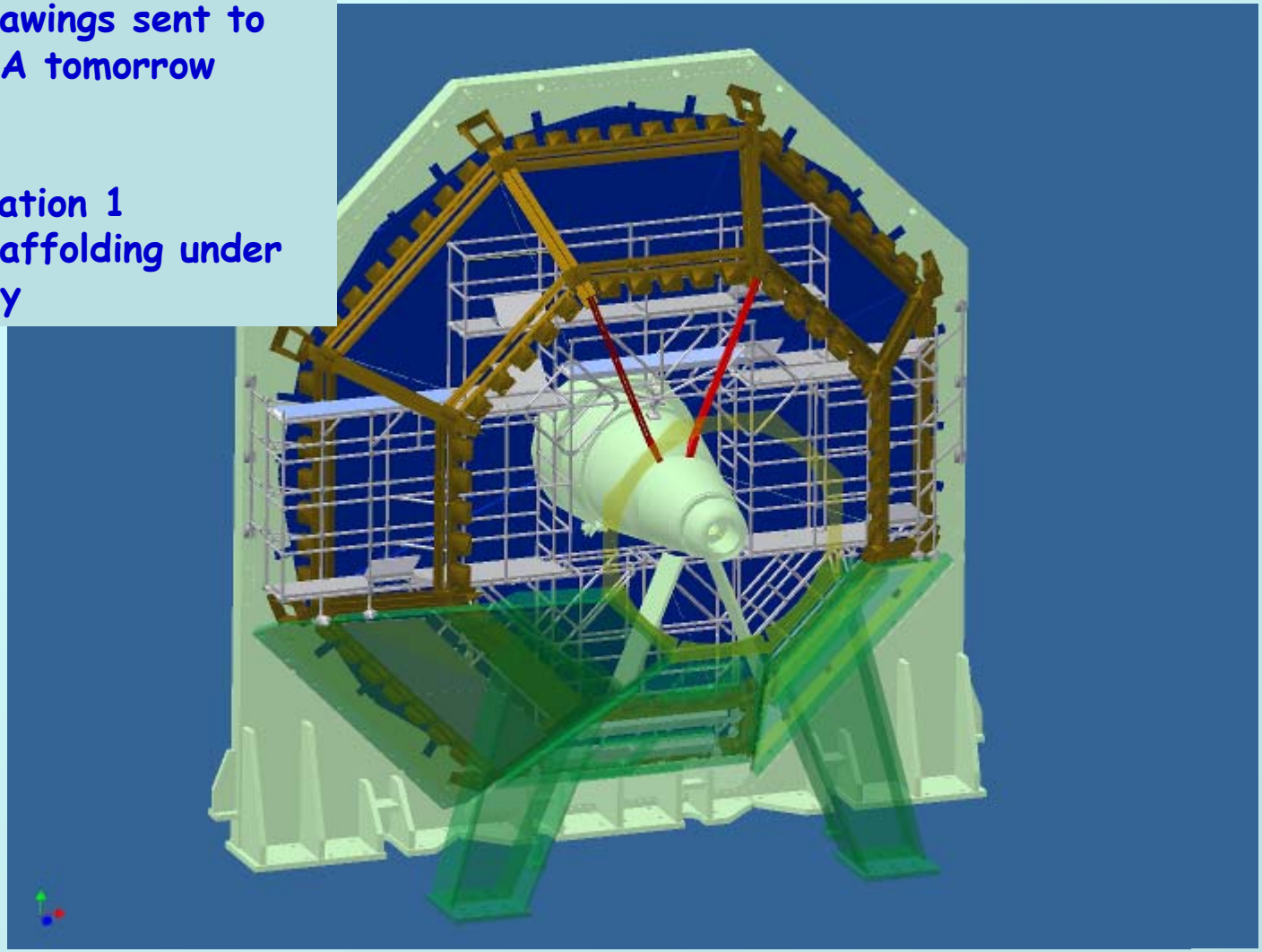


MMN Scaffolds

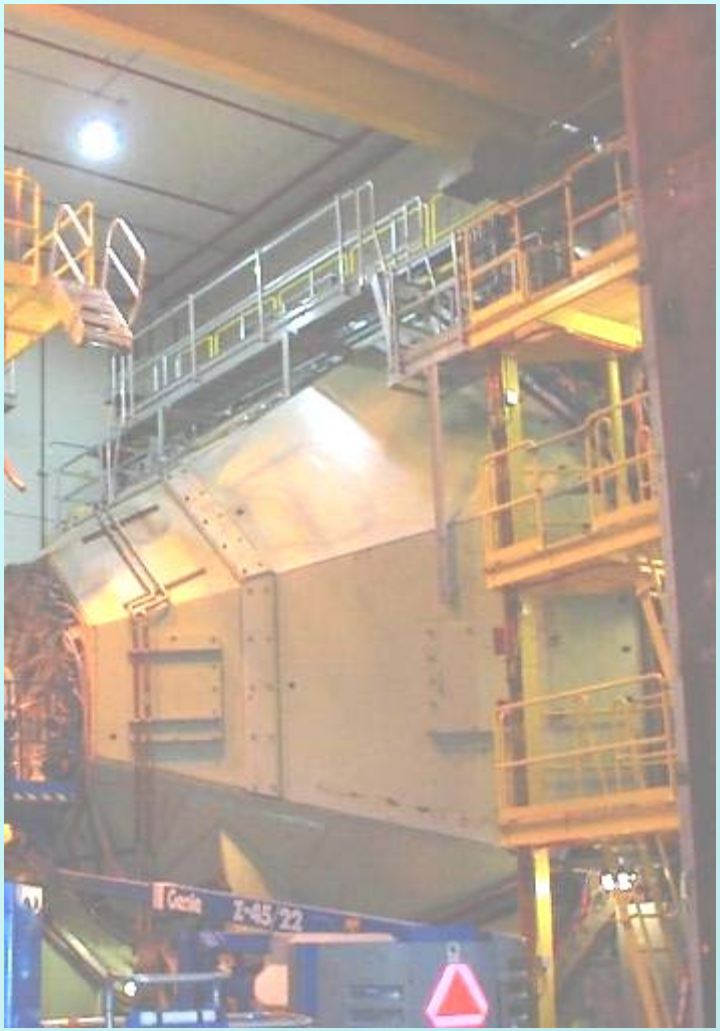
Design is complete.

Drawings sent to C-A tomorrow

Station 1 Scaffolding under way



MMN Scaffolds



Mu Trigger FEE Cable Management:

116 12AWG LV cables for North + fibers

100 12AWG LV Cables for South + fibers

Need power and water to racks

Station 1 Scaffolds

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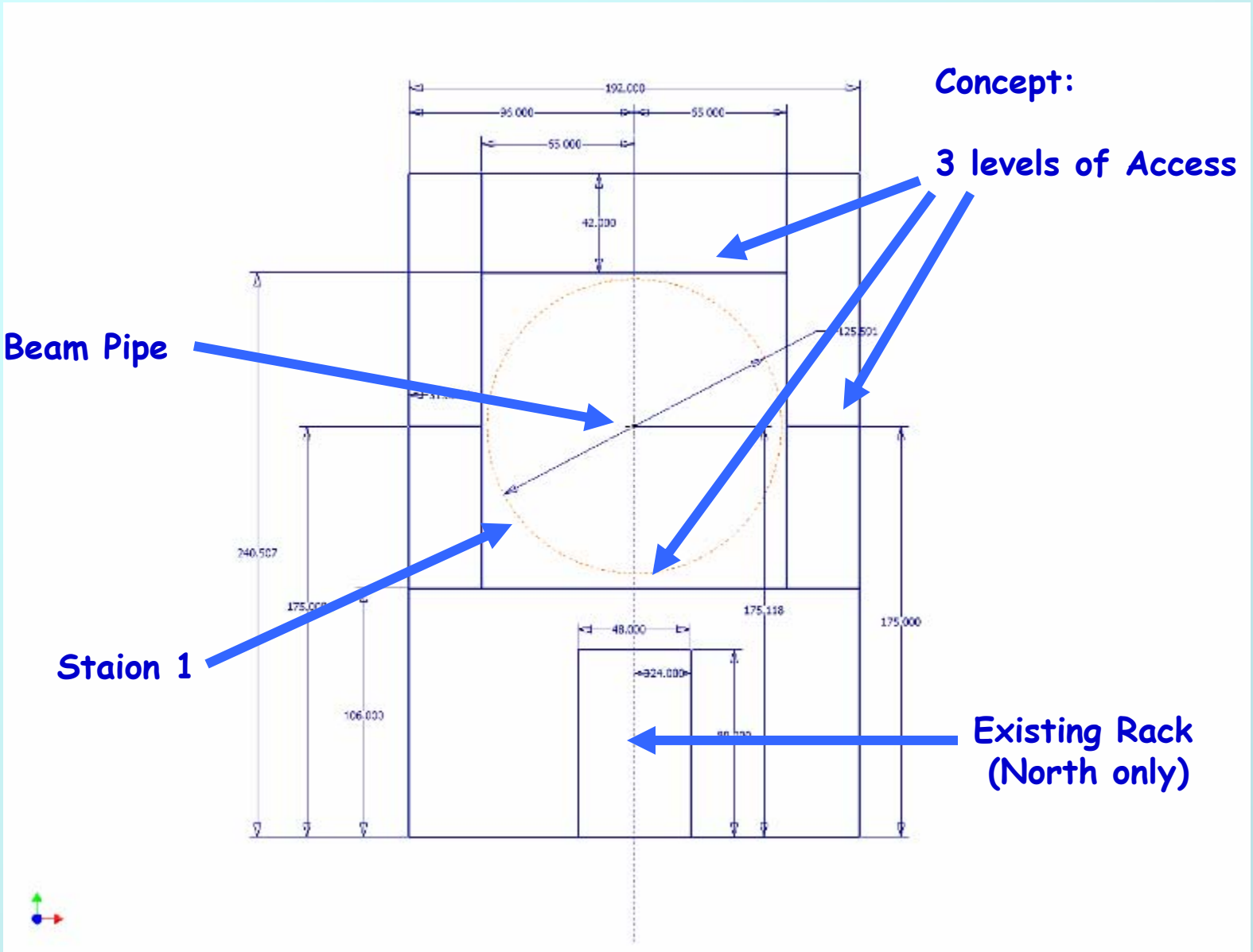


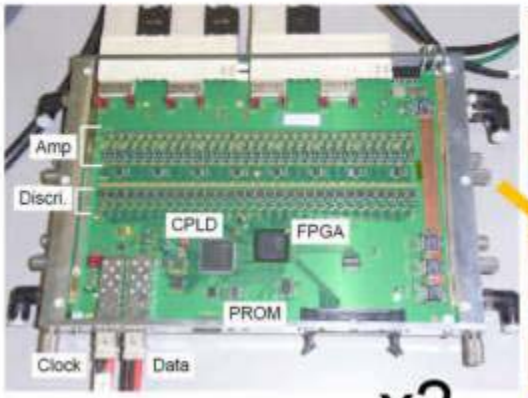
New ADTX Board Test @ IR

Feb. 21, 2008
PHENIX Planning Meeting
Yoshinori Fukao

We thank all people helping us.

Thank you !!

MuTr North, Station-2, Octant-7



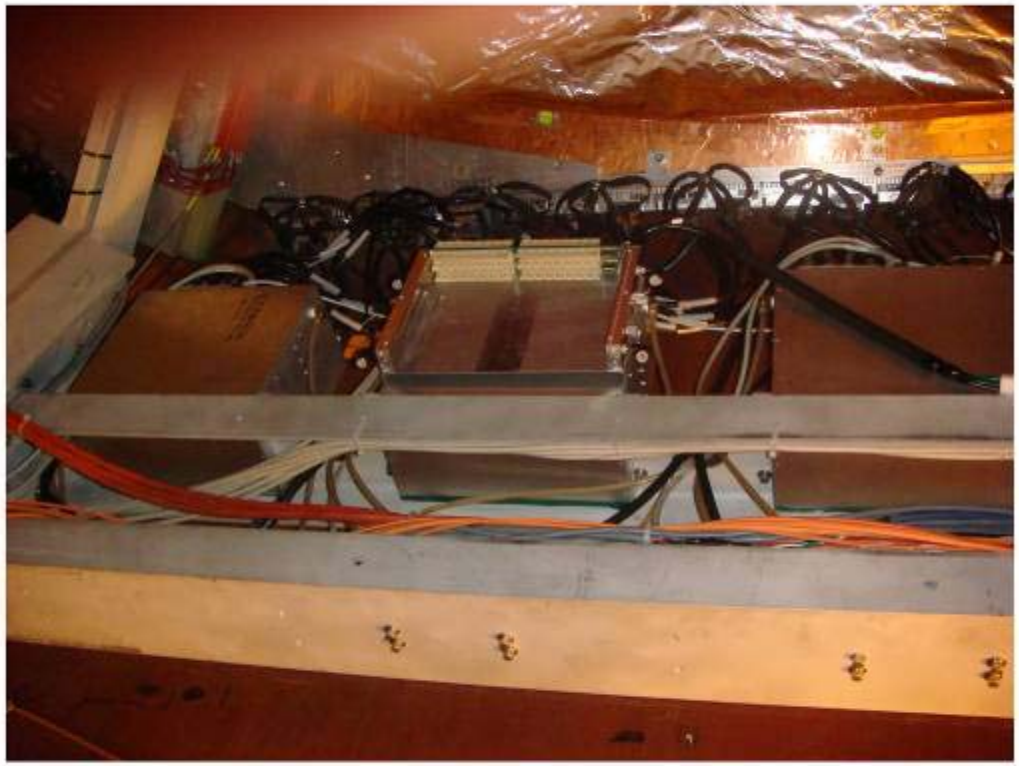
x2

6 optical cables

1 LV cable

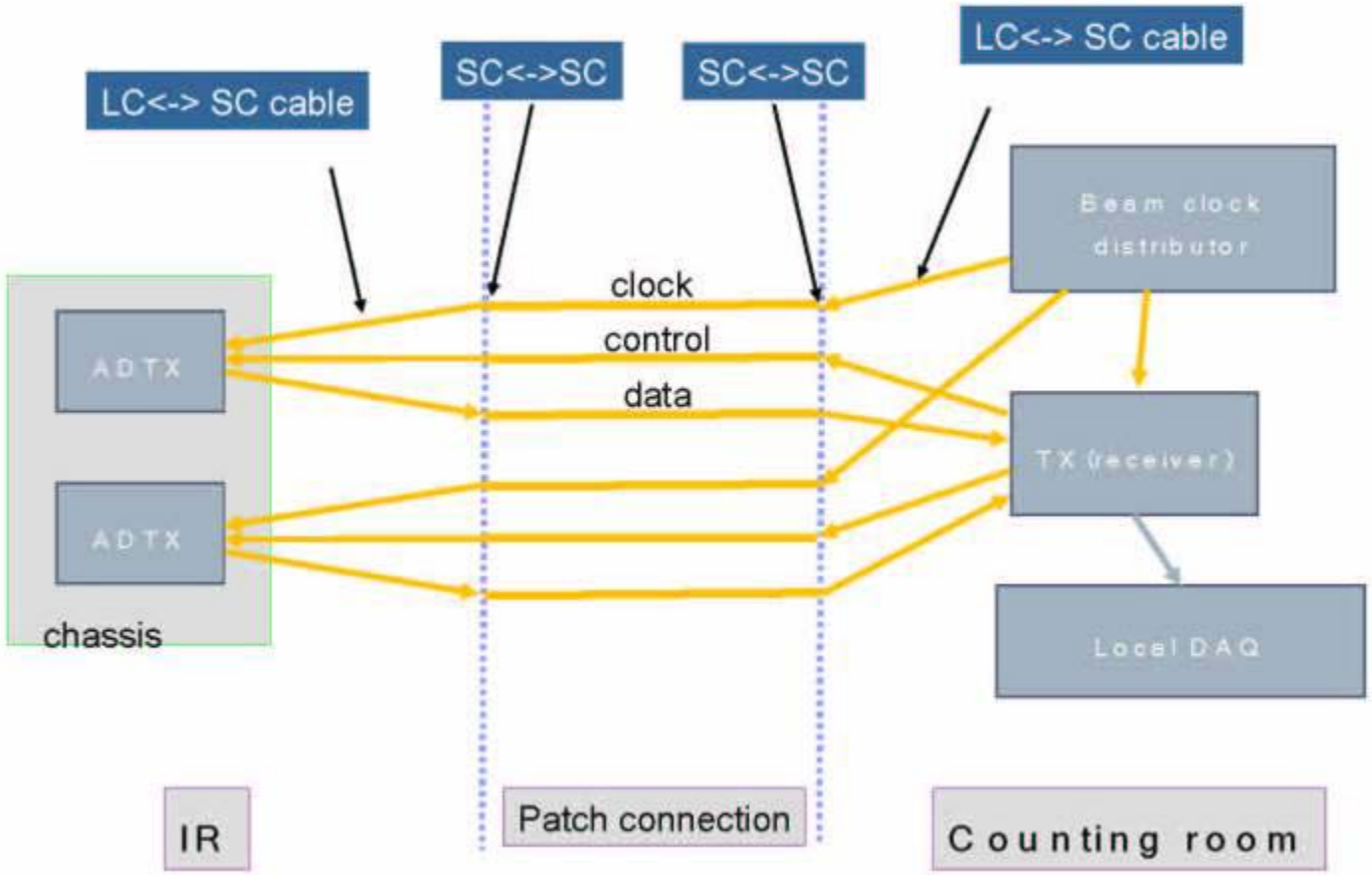
- MuTRG boards will be installed on the 2nd FEE from left.
- 48 strips from gap-2 and 3 each will be connected to the boards.

MuTr North, Station-2, Octant-7

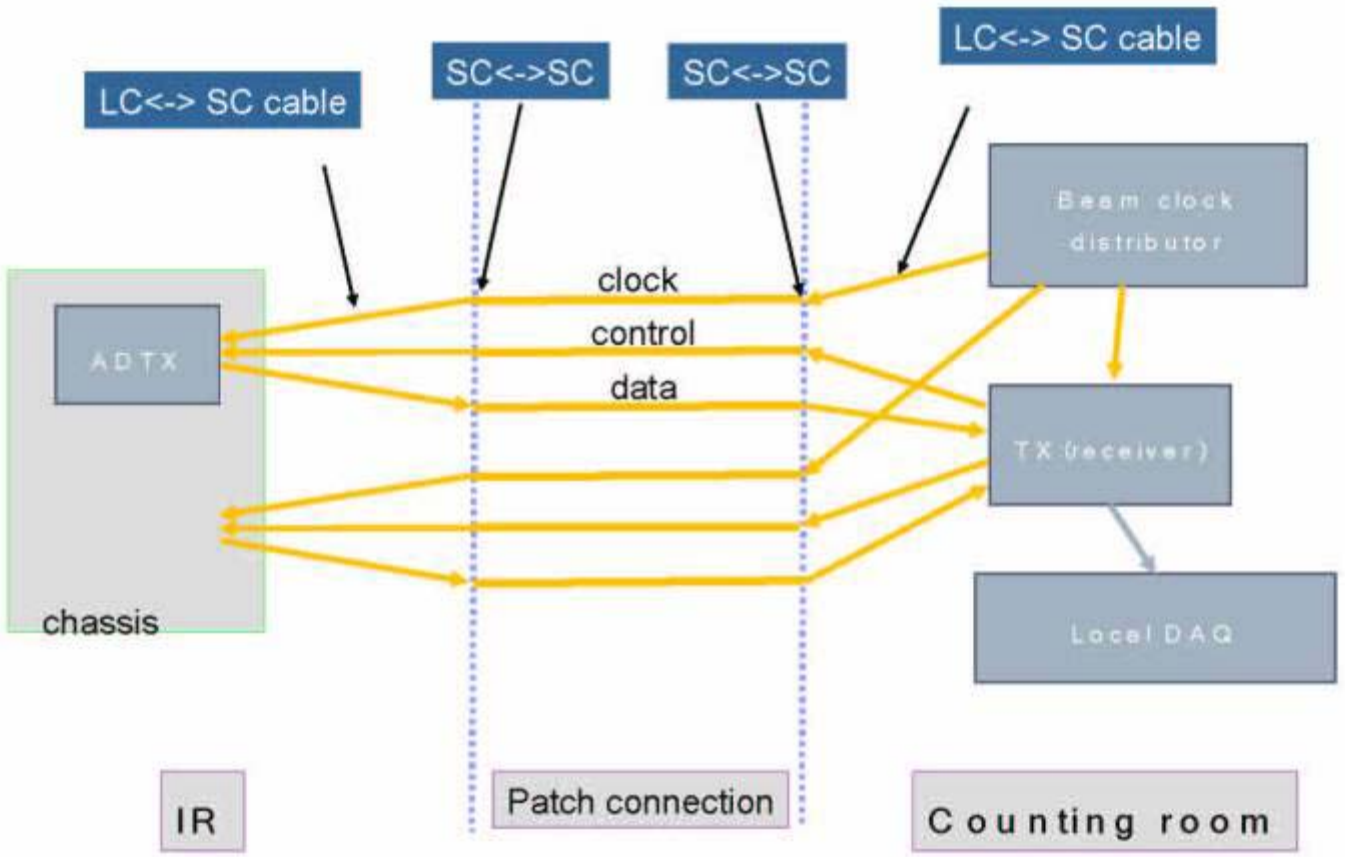


Chassis mount looks good!
We will produce chassis based on this design.

Setup Scheme



Setup Scheme

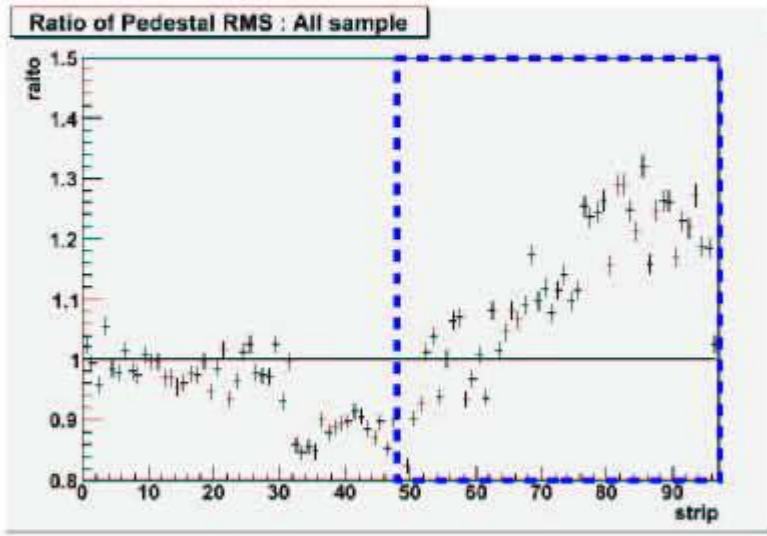


What we did during the access

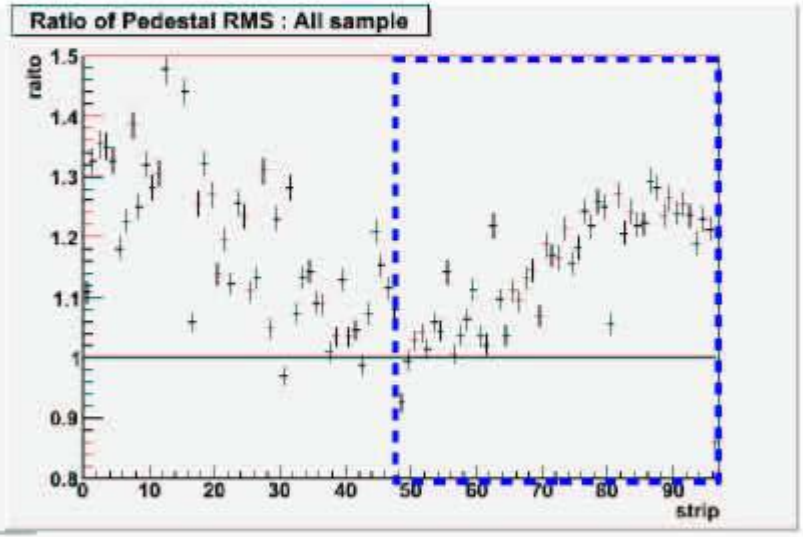
1. Check initial performance of MuTr (Noise / Gain).
2. Install cables, MuTRG–chassis, tubes for cooling.
3. Install boards step by step checking noise
   > Check PHENIX LV.
   -> LV distributor with new fuse looks O.K. so far.
   -> Large noise on our board with LV with polyfuse.
4. Flow cooling water
5. Examine performance of MuTr and MuTRG boards.
   > Measure noise and gain of MuTr FEE.
   > Measure noise on MuTRG boards.
   > Check dependence of threshold of MuTRG.
   -> We could'nt check threshold dependence.
6. Uninstall
   -> Remove all items after Run8 finished.

Very Preliminary Result

Yesterday
(ADTX combined)



Summer
(AD + TX separate)



Noise level of MuTr FEE is almost same.

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To Do

> We continue to take data using our Local DAQ with magnet on, beam on, to check noise on our board.

> Look at daily calibration data for MuTr and monitor the noise on MuTr FEE.

> Will fix the switch on the board to set threshold of the trigger board in the access at ~1 pm.

> We will finish taking data at Mar. 4th, then uninstall the board after Run8.

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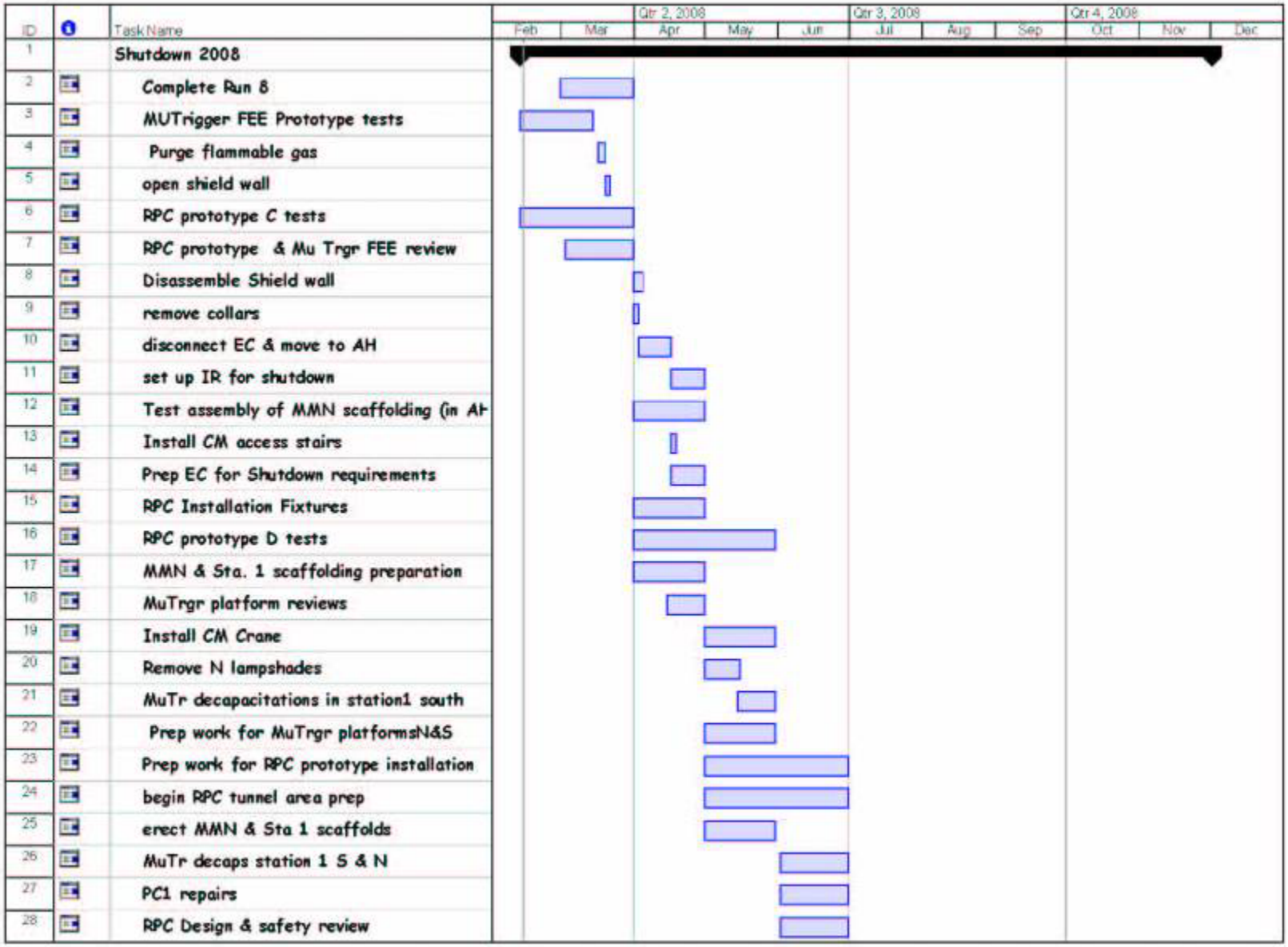

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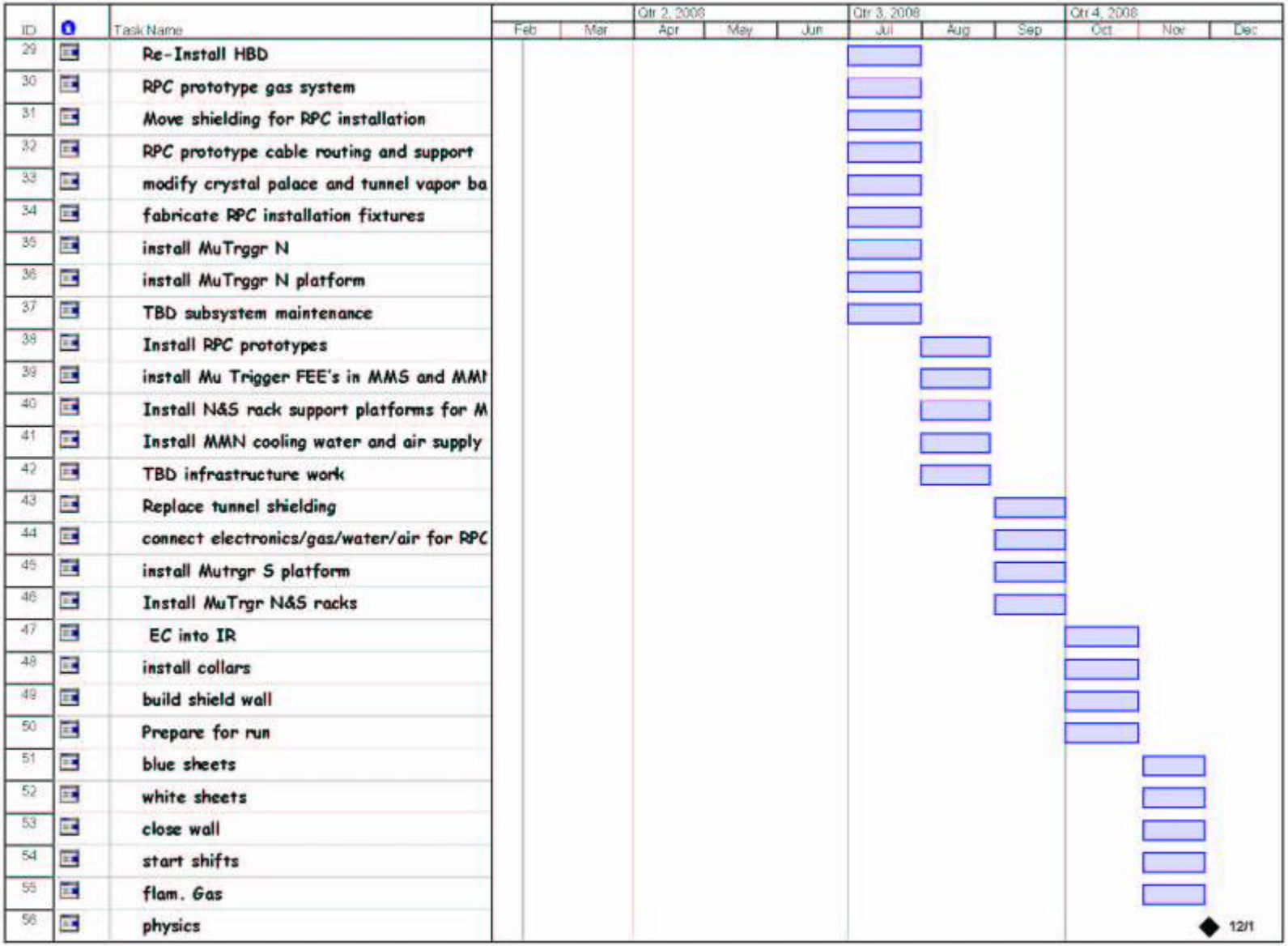

ID	Task Name
29	Re-Install HBD
30	RPC prototype gas system
31	Move shielding for RPC installation
32	RPC prototype cable routing and support
33	modify crystal palace and tunnel vapor ba
34	fabricate RPC installation fixtures
35	install MuTrggr N
36	install MuTrggr N platform
37	TBD subsystem maintenance
38	Install RPC prototypes
39	install Mu Trigger FEE's in MMS and MMI
40	Install N&S rack support platforms for M
41	Install MMN cooling water and air supply
42	TBD infrastructure work
43	Replace tunnel shielding
44	connect electronics/gas/water/air for RPC
45	install Mutrgr S platform
46	Install MuTrgr N&S racks
47	EC into IR
48	install collars
49	build shield wall
50	Prepare for run
51	blue sheets
52	white sheets
53	close wall
54	start shifts
55	flam. Gas
56	physics

Shutdown '08 Schedule

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CM Crane Review	Feb-Mar 15
New Beam Pipe Design	Feb
Complete Run 8	Mar 12
MuTrigger Prototype Tests	Feb 27-March 15
Purge Flammable Gas	Mar 12-14
Remove lock-out & open shield wall	Mar 14
RPC Prototype C tests (in tent)	Feb- Mar
Disassemble & store shield wall & base	Mar 17-21
Beam pipe design review	mid Mar
Mu Trigger Review	Mar 19
RPC Prototype engineeing & safety review	Mar 24
IR Crane certification	Mar 14
Remove Collars	Mar 17-18
Disconnect EC & move to AH	Mar 17-April 4
End of run Party	Apr. 4?
Inventory/test assembly of MMN scaffold	Apr
Install CM access stairs	Apr 7-11
RPC Prototype D tests (in tent)	Apr-May

Shutdown '08 Schedule, cont'd

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Design RPC installation fixtures & FEE platforms	Apr-May
MuTrgr Platform review	mid Apr
Move MMS South (MuTr Decaps?)	Apr 15 (tax day)
DC/PC west work ?	Apr 1-30
Install CM Crane	May
Remove North access & MMN 4 lampshades	May
Move CM south	May 1
Install Station 1 North scaffolding	May 1
Station 1 North decaps	May
Prep work for Mutrgr platforms (water/elec)	May-June
Prep work for RPC proptotype install	May-June
Erect MMN scaffolding	June
MMN decaps	June-July
RPC engineering & safety review	mid June
MuTrigger FEE N Install	July
HBD Install	July-August

Shutdown '08 Schedule, cont'd

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RPC prototype gas system	July
Move shielding for RPC prototype installation	July
RPC prototype cable routing & support	July
Modify crystal palace & vapor barrier	July
Install MuTrigger FEE N platform	July
RPC prototype install	August
Install RPC prototype rack in tunnel south	August
Install Mutrigger FEE's in MMS for RPC test	August
Install MuTrigger FEE South platform	August
Install MuTrgr N&S rack cooling & electric	August
Install MuTrigger N cooling water & air	August
Replace tunnel shielding	Sept
Connect electronics/gas/water/air for RPC	Sept.
Install MuTrigger N& S racks	Sept.
Remove all installation equipment	Oct.
Prep for run 9	Oct
Close shield wall start shifts	Nov
Start physics	Dec.

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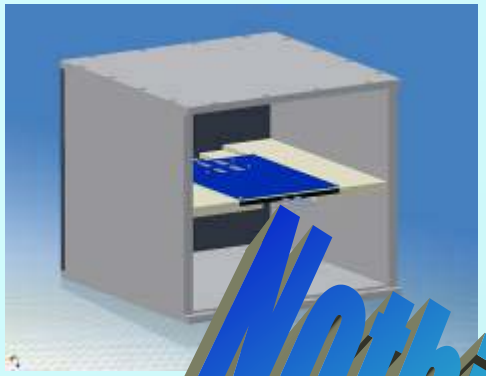
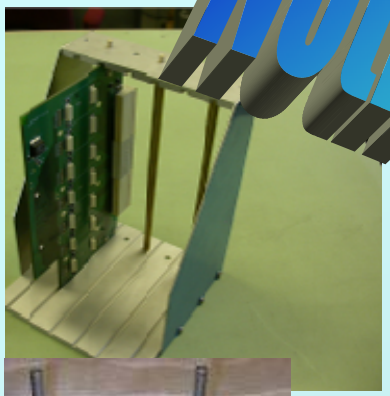
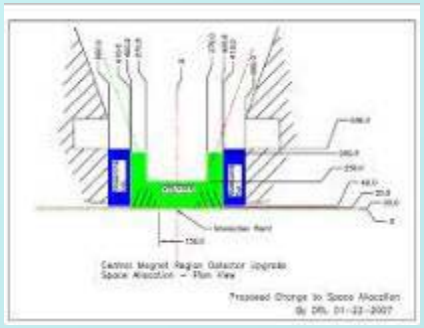
Other Work

- VTX, FVTX and NCC prototype support
  - Integration
  - Physical and Rack space
  - Infrastructure upgrades
- New Counting House Door
- VTX Prototype for run 8 ?







Nothing New This Week

Safety, Security, Etc. :

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Main gate traffic lights: Be aware that the 2 lights going across the Wm Floyd are no longer necessarily in sync. Some of you might remember the summer student killed there in the '90's.

West access to the ring: I wrote the Monday morning memo several weeks ago – no response. Maybe more requests would help get it into discussion.

Tunnel Access: Carter spoke with Ray Karol regarding a possible film badge exemption for the tunnel for RPC work. Ray is having a survey done at the next access to get a feel for the radiological "landscape". Charlie indicated it may not be feasible because of the collimators upstream on either side are a little on the "warm" side. Also, without physical gating, the PASS guys have no guarantee people are only going up to the rope, or whatever we use as a boundary.

Carter also asked Charlie about "walkovers" over the magnets to get to the RPC racks during accesses. That could be an expensive proposition.

5 Year Plan

Technical Support 2008

2008	Install stations 1& 2 of MuTr FEE upgrades (north), 1 octant Cu absorber (S), 1 half otants each RPC2/3 S, MMN sta. 2 scaffolding, MuTr Sta 1 N&S scaffolding, 1 octant of MuTrigger FEE upgrades (south, sta 1 & 2), MuTr N stn. 1 & 3 decaps, MuTrigger rack platforms (N&S), CM crane, remove/replace beampipe, infrastructure upgrades & repairs, misc. subsystem work, 1 RPC rack in South tunnel, MuTrgr FEE N & S racks
2009	Remove HBD & RXNP, scaffolding in MMS, MuTr S stn. 1 & 3 decaps, RPC2 N, RPC3 N, north Cu absorbers, partial VTX, iFVTX, MuTrgr S sta 1 & 2, MuTrgr S rack, 2 racks in N tunnel, infrastructure upgrades & repairs, misc. subsystem work
2010	Remainder of VTX barrel, partial FVTX, south Cu absorber completed, MuTrgr FEE stn. 3 S, any remaining MuTr decaps, infrastructure upgrades & repairs, misc. subsystem work
2011	RPC1 N&S, NCC N, remainder of FVTX, DC West upgrade/repair, remove absorbers, infrastructure upgrades & repairs, misc. subsystem work
2012	NCC S, upgrades contingency & wishlist, infrastructure upgrades & repairs, misc. subsystem work, TBD new and improved upgrades

** Years refer to the shutdown year and follow the run with the similar number (i.e. work in 2008 is to be done in the shutdown that follows run 8, and so on)*

Where To Find PHENIX Technical Info

Links for the weekly planning meeting slides, long term planning, pictures, videos and other technical info can be found on the web site:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm